

May 17, 2021

**VIA ELECTRONIC MAIL**

Luly E. Massaro, Commission Clerk  
Rhode Island Public Utilities Commission  
89 Jefferson Boulevard  
Warwick, RI 02888

**RE: Docket 4995 – FY2021 Electric Infrastructure, Safety, and Reliability Plan  
Quarterly Update – Fourth Quarter Ending March 31, 2021**

Dear Ms. Massaro:

On behalf of National Grid,<sup>1</sup> I have enclosed an electronic version of the Company's fiscal year (FY) 2021 Electric Infrastructure, Safety, and Reliability (ISR) Plan quarterly update for the fourth quarter ending March 31, 2021.<sup>2</sup> Pursuant to the provisions of the approved FY 2018 Electric ISR Plan, the Company committed to providing quarterly updates on the progress of its Electric ISR program to the Rhode Island Public Utilities Commission and the Rhode Island Division of Public Utilities and Carriers.

Thank you for your attention to this matter. If you have any questions, please contact me at 401-784-7288.

Very truly yours,



**Jennifer Brooks Hutchinson**

**Enclosures**

cc: Docket 4995 Service List  
Tiffany Parenteau, Esq.  
John Bell, Division  
Greg Booth, Division

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<sup>1</sup> The Narragansett Electric Company d/b/a National Grid (National Grid or the Company).

<sup>2</sup> Per Commission counsel's update on October 2, 2020, concerning the COVID-19 emergency period, the Company is submitting an electronic version of this filing followed by five (5) hard copies filed with the Clerk within 24 hours of the electronic filing.

Certificate of Service

I hereby certify that a copy of the cover letter and any materials accompanying this certificate was electronically transmitted to the individuals listed below.

The paper copies of this filing are being hand delivered to the Rhode Island Public Utilities Commission and to the Rhode Island Division of Public Utilities and Carriers.



\_\_\_\_\_  
Joanne M. Scanlon

May 17, 2021  
Date

**Docket No. 4995 - National Grid's Electric ISR Plan FY 2021  
Service List as of 1/29/2020**

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<p><b>File an original &amp; ten copies w/:</b>  Luly E. Massaro, Commission Clerk  Public Utilities Commission  89 Jefferson Blvd.  Warwick, RI 02888</p>	<p><a href="mailto:Luly.massaro@puc.ri.gov">Luly.massaro@puc.ri.gov</a>;</p>	<p>401-780-2107</p>
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**Electric Infrastructure, Safety, and Reliability Plan  
FY 2021 Quarterly Update  
For the Twelve months Ending March 31, 2021**

**EXECUTIVE SUMMARY**

As shown in Attachment A during the fiscal year ending March 31, 2021, the Company<sup>1</sup> spent \$100.7 million for capital projects against a Fiscal Year 2021 (FY 2021) budget of \$103.8 million. Spending was under-budget by \$3.0 million. FY 2021 Non-Discretionary spending was \$2.7 million over the budget of \$38.9 million. FY 2021 Discretionary spending, including the Southeast Substation project, was \$5.7 million under the budget of \$64.8 million. Spending in each of these categories is addressed in more detail below.

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<sup>1</sup> The Narragansett Electric Company d/b/a National Grid (National Grid or the Company).

## I. FY 2021 Capital Spending by Key Driver Category

### 1. Non-Discretionary Spending

#### a. Customer Request/Public Requirement

During the fiscal year ending March 31, 2021, capital spending in the Customer Request/Public Requirement category was \$22.1 million which was under budget by \$4.5 million. The major drivers are

- Activity for the year associated with a joint-owned pole agreement exceeded the amount budgeted resulting in additional credits applied to the New Business-Residential category. Activity for the year totaled \$4.6 million which was higher than budgeted by \$3 million and included billings million for prior year joint-owned pole installations as the Company finalized processes with Verizon. At the end of the fiscal year, billings by the Company under the joint-owned pole agreement lagged one month, which is the expected ongoing lag. Remaining activity under the blanket project and on specific projects was \$1.5 million over the \$5.7 million budgeted.
- Spending in the New Business Commercial category was \$1.2 million under budget for the year. This variance was driven by underspending in both the blanket project and specific projects during the year.
- Spending in the Public Requirements category was \$4.1 million under budget for the year. This variance was driven by Rhode Island Department of Transportation billings of \$5.3 million included in the Public Requirements spending category.
- The projects associated with Meter Purchases and Installations are under budget by \$1.4 million for FY 2021. Spending was less than the amount budgeted due to the purchase of fewer meters and decreased field activity for non-essential work. Some meter change work and installations requiring access to customers' homes or businesses and customer facing interactions were not done due to COVID-19 work restrictions.
- A minimal amount of spending took place for engineering of feeder monitors. This resulted in an underspending of \$2.0 million in the Strategic DER Enabling Devices category for FY 2021.
- Billings for work that will take place in FY 2022 caused the Third-Party Attachment category to be under budget by \$0.8 million at fiscal year-end.
- Activity in the Distributed Generation category was \$6.6 million over budget, primarily due to the transition to the new process for recording customer Contribution in Aid of Construction (CIAC). Substantial progress was made on the transition to a new process for recording CIACs for DG projects at the work

order level to match CIACs in capital spending when the work is performed instead of all at once when received. Implementation of this new process will continue into FY 2022. Once the process has been fully implemented, the Company expects that the net capital activity for any fiscal year will be minimal.

**b. Damage/Failure**

During the fiscal year ending March 31, 2021, capital spending in the Damage/Failure category was \$19.5 million, which was \$7.1 million over the budget of \$12.4 million. This variance is primarily driven by spending on major storms totaling \$7.8 million, which is \$6.1 million over the budget of \$1.7 million. There were 12 major storm events in FY 2021 as compared with three in FY 2020. In addition, spending on the remaining Damage/Failure is over budget by \$1.0 million. The Company began adopting the new process of categorizing only work related to failed assets in the Damage/Failure category of the Non-Discretionary portfolio and all other work in the Asset Replacement category of the Discretionary portfolio during FY 2021. As part of developing an estimate of how this new process will impact the Damage/Failure and Asset Replacement budgets, \$2 million was reduced from the Damage/Failure budget in FY21 from the FY20 level and the Asset Replacement and Inspection & Maintenance (I&M) budgets were each increased \$1 million over FY 20 budgets. The transition to the new process progressed throughout the fiscal year and the Company performed a monthly review of spending to ensure appropriate categorization. Monthly review of Damage/Failure work will continue in FY 2022.

**2. Discretionary Spending**

**a. Asset Condition (without Southeast Substation)**

During the fiscal year ending March 31, 2021, capital spending in the Asset Condition category (excluding the Southeast Substation project) was \$28.9 million, which was \$2.2 million under the budget of \$31.0 million. The major drivers of this variance are as follows:

- Capital spending on Dyer Street substation was \$3.9 million under the budget of \$7.2 million. This project was paused in FY 2020 due to higher cost estimates than expected. The Company performed a revised option analysis which resulted in an updated project at reduced costs and created spending shifts from the first half of FY 2021 to the last half of FY 2021 and into FY 2022.
- Capital spending on the Providence Area Study projects (Admiral Street projects) was \$1.6 million under the budget of \$4.2 million primarily due to project delays

and capital efficiencies that were secured related to the use of an existing transformer rather than purchasing a new transformer.

- Capital spending on URD projects consisted of work that lagged from FY 2020 and new projects planned for FY 2021. As costs were increasing greater than budgeted some projects planned for FY2021 were deferred to FY 2022 to control spending. Costs increased \$0.9 million over budget for FY 2021 due to increases in overtime costs to shorten outages to accommodate remote working, increased site costs due to underground conditions, and increased costs as a new vendor was replaced.
- Underground Cable Replacement program spending is \$0.6 million over the \$3.8 million budget due primarily to work time constraints that caused work to be performed at night at higher rates.
- The Apponaug Substation retirement, included in the Central Rhode Island East Area Study, was completed and put in service during FY 2021. Capital spending was \$1.2 million and was \$0.9 million more than the amount budgeted in FY 2021 as at the time the FY21 budget was estimated more work was expected to be completed in FY20 and was \$0.6 million under budget.
- Two additional projects were completed during FY 2021 that were begun in prior years. Capital spending on Kent County Breaker Replacement project was \$0.5 million and capital spending on a Distribution Secondary Network Arc project was \$0.8 million. Both projects were expected to be completed in previous years and lagged into FY 2021 after the FY 2021 budget was set. These projects have been moved to plant in service.
- The Asset Replacement Blanket and I&M budgets were each increased in FY21 over the FY20 levels by \$1 million (or \$2 million combined) to estimate for the change in the process for classification of failed assets, as discussed above. The Asset Replacement blanket was \$0.3 million over the FY 2021 budget of \$4.5 million and the I&M program was \$0.9 million under the FY 20201 budget of \$2.9 million. Refer to the Damage/Failure section this report for additional information on the changes to the classification of failed assets and the Company's continuing review of Damage/Failure work.

***b. Non-Infrastructure***

During the fiscal year ending March 31, 2021 capital spending in the Non-Infrastructure was \$0.6 million under budget. This variance is attributed to the application of capital overheads, which will be applied to projects in the following year.

**c. System Capacity and Performance**

During the fiscal year ending March 31, 2021 capital spending for the System Capacity and Performance category was \$17.4 million, which was \$5.8 million under the budget of \$23.1 million. The major drivers of this variance are as follows:

- Capital spending on the Aquidneck Island projects was \$4.3 million under the budget of \$13.5 million. Reductions in spending relate to COVID-19 work requirements shifting some construction costs into FY 2022, as well as the removal of contingencies once it was determined that a required outage could be scheduled during FY 2021.
- Capital spending on New Lafayette substation project was \$0.5 million over the FY 2021 budget of \$0.4 million as a result of advancing civil work to enable efficiencies by coordinating with a Distributed Generation project taking place on the same site.
- Capital spending on the East Providence substation was \$1.3 million under the budget of \$1.6 million due to project delays.
- Capital spending for the EMS Expansion program was \$0.7 million under the budget of \$1.0 million. Underspending was partially a result of pausing work at sites to allow for alignment with area studies.
- The Company spent \$1.9 million for its 3V0 program and Strategic DER Advancement projects against a budget of \$2.2 million in FY 2021. This was primarily driven by the purchase of four mobile 3V0 units that came in under the original estimate by \$0.6 million.
- During FY 2021, the Company spent \$0.3 million on COVID-19 related work and included the spending as Discretionary. This work included small-scale solutions such as fuse replacements, feeder balancing, and upgrading equipment such as load break switches and step-down transformers, to larger sizes.

**d. Southeast Substation Projects**

During the fiscal year ending March 31, 2021, capital spending on the Southeast Substation project was \$13.0 million, which was \$2.9 million over the FY 2021 budget of \$10.1 million due to a combination of project delays from FY 2020 and increased costs. The substation portion of this project is substantially complete and went into service in March 2021. The remaining substation work planned for FY 2022 is site civil work. The distribution line portion of this project is expected to be completed in FY 2022. In total, the Company currently expects capital spending to be \$22.2 million for this project as compared with the estimate when sanctioned of \$21.1 million. The difference of \$1.8 million is primarily due to field conditions, requiring environmental management of an

additional volume of soil, and additional resources, such as crane and other equipment rentals, to manage construction site congestion. See [Attachment G](#) for additional details.

***e. Large Project Variances***

The Company provides explanations for large projects<sup>2</sup> with variances that exceed +/- 10% of the annual fiscal year budget in quarterly reports. These projects represented \$38.0 million of the FY 2021 budget of \$103.8 million. This project information is provided in [Attachment E](#).

***f. New Distribution System Technology Update***

The Quarterly Updates include an explanation of all new technologies the Company is exploring to assist in distribution system planning, particularly as they relate to the integration of distributed energy resources or to providing additional visibility on the distribution grid. Most recently, the Company has increased its use of Python Scripting to improve automation in CYME as well as other computer programs. For example, the recent COVID-19 scenario analysis utilized Python scripts to run the initial CYME analysis.

**3. Investment Placed-in-Service**

During the fiscal year ending March 31, 2021, \$116.6 million of plant additions were placed in service which is 106% of the FY 2021 target of \$110.5 million. Details by spending rationale are included in [Attachment B](#).

As shown on [Attachment B](#), Non-Discretionary plant additions placed in service during the fiscal year totaled \$36.6 million, which is 109% of the FY 2021 target of \$33.6 million. Discretionary plant additions placed in service during the same period totaled \$80.0 million, which is 104% of the FY 2021 target of \$76.9 million.

**4. Vegetation Management (VM)**

During the fiscal year ending March 31, 2021, the Company completed 1,215 miles or 100% of its annual distribution mileage cycle pruning goal. VM O&M spending was \$10.7 million against a budget of \$10.6 million.

[Attachment C](#) provides the spending for FY 2021 and an update of the gypsy moth and other pest-related damage tracked.

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<sup>2</sup> Large projects are defined as exceeding \$1.0 million in total project cost.

## **5. Inspection and Maintenance (I&M)**

During the fiscal year ending March 31, 2021, the Company completed 100% of its annual structure inspection goal of 48,631 with an associated Opex spend of \$0.5 million. This spending includes mobile elevated voltage testing and repairs which the PUC approved in Docket No. 4237.

The Company began performing inspections on its overhead distribution system in FY 2011 and began performing the repairs based on those inspections in FY 2012. Deficiencies found are categorized as Level I, II, or III. Level I deficiencies are repaired immediately or within 30 days of the inspection. During FY 2021 no Level I deficiencies were found and the Company completed repairs for 33 percent of the total deficiencies found. This information is summarized in the table below.

<b>Summary of Deficiencies and Repair Activities RI Distribution</b>				
<b>Year Inspection Performed</b>	<b>Priority Level/Repair Expected</b>	<b>Deficiencies Found (Total)</b>	<b>Repaired as of 3/31/21</b>	<b>Not Repaired as of 3/31/21</b>
<b>FY 2011</b>	I	18	18	0
	II	13,146	13,128	18
	III	28	28	0
<b>FY 2012</b>	I	17	17	0
	II	15,847	15,544	303
	III	626	624	2
<b>FY 2013</b>	I	15	15	0
	II	25,883	16,492	9,391
	III	8,780	4,634	4,146
<b>FY 2014</b>	I	11	11	0
	II	22,096	4,375	17,721
	III	8,414	3,026	5,388
<b>FY 2015</b>	I	5	5	0
	II	20,805	1	20,804
	III	4,351	0	4,351
<b>FY 2016</b>	I	2	2	0
	II	11,018	1,072	9,946
	III	6,441	191	6,250
<b>FY 2017</b>	I	2	2	0
	II	8,567	0	8,567
	III	7,272	0	7,272
<b>FY 2018</b>	I	11	11	0
	II	8,639	11	8,628
	III	7,196	14	7,182
<b>FY 2019</b>	I	28	28	0
	II	3,699	0	3,699
	III	2,464	0	2,464
<b>FY 2020</b>	I	19	19	0
	II	186	1	185
	III	26	0	26
<b>FY 2021</b>	I	0	0	0
	II	53	0	53
	III	37	0	37
<b>Total Since Program Inception</b>	<b>I, II, III</b>	<b>175,702</b>	<b>59,269</b>	<b>116,433</b>

<b>Manual Elevated Voltage Testing</b>				
<b>Manual Elevated Voltage Testing</b>	<b>Total System Units Requiring Testing</b>	<b>FY 2021 Units Completed thru 3/31/21</b>	<b>Units with Voltage Found (&gt;1.0v)</b>	<b>Percent of Units Tested with Voltage (&gt;1.0v)</b>
Distribution Facilities	268,651	45,875	0	0%
Underground Facilities	12,438	0	0	0%
Street Lights	4,929	1,135	0	0%

During FY 2021, the Company’s manual elevated voltage testing has not indicated any instances of elevated voltage.

FY 2021 I&M program costs and other O&M spending are shown in Attachment D.

## Attachment A

### US Electricity Distribution - Rhode Island Capital Spending by Spending Rationale For the Twelve months Ending March 31, 2021 (\$000)

	FY 2021		
	Budget	Actuals	Over Spend / (Under Spend)
<b>Customer Request/Public Requirement</b>	\$26,540	\$22,079	(\$4,461)
<b>Damage Failure</b>	\$12,365	\$19,491	\$7,126
<i>Subtotal Non-Discretionary</i>	\$38,905	\$41,569	\$2,664
<b>Asset Condition</b>	\$31,040	\$28,865	(\$2,175)
<b>Non-Infrastructure</b>	\$580	(\$57)	(\$637)
<b>System Capacity &amp; Performance</b>	\$23,145	\$17,387	(\$5,758)
<i>Subtotal Discretionary (excl. SE Sub)</i>	\$54,765	\$46,195	(\$8,570)
<b>Southeast Substation Project</b>	\$10,080	\$12,951	\$2,871
<i>Subtotal Discretionary</i>	\$64,845	\$59,147	(\$5,698)
<b>Total Capital Spending</b>	<b>\$103,750</b>	<b>\$100,716</b>	<b>(\$3,034)</b>

## Attachment B

### US Electricity Distribution - Rhode Island Plant Additions by Spending Rationale For the Twelve months Ending March 31, 2021 (\$000)

	Target	Actuals	% of Target In Service
<b>Customer Request/Public Requirement</b>	\$21,210	\$16,921	80%
<b>Damage Failure</b>	\$12,335	\$19,684	160%
<i>Subtotal Non-Discretionary</i>	\$33,545	\$36,605	109%
<b>Asset Condition (w/Southeast Substation)</b>	\$38,948	\$46,730	120%
<b>Non- Infrastructure</b>	\$566	\$197	35%
<b>System Capacity &amp; Performance</b>	\$37,435	\$33,114	88%
<i>Subtotal Discretionary</i>	\$76,949	\$80,041	104%
<b>Total Plant Additions</b>	<b>\$110,494</b>	<b>\$116,646</b>	106%

### Attachment C

#### US Electricity Distribution - Rhode Island Vegetation Management O&M Spending For the Twelve months Ending March 31, 2021 (\$000)

	Budget	Actual	% Spend
Cycle Pruning (Base)	\$6,100	\$5,968	98%
Hazard Tree	\$1,750	\$1,653	94%
Sub-T (on & off road)	\$550	\$397	72%
Police/Flagman Details	\$775	\$768	99%
Core Crew (all other activities)	\$1,425	\$1,900	133%
<b>Total VM O&amp;M Spending</b>	<b>\$10,600</b>	<b>\$10,686</b>	<b>101%</b>

#### Gypsy Moth Update

District	Circuit	Location	Removals
Coastal	49_56_54F1	Coventry	65
Coastal	49_56_63F6	Hopkins Hill	48
Capital	49_53_15F1	Hope	9
Coastal	49_56_68F1	Kenyon	51
Capital	49_53_127W40	Nasonville	104
Capital	49_53_23F3	Farnum Pike	41
Capital	49_53_23F5	Farnum Pike	30
Capital	49_53_23F6	Farnum Pike	50
Capital	49_53_34F2	Chopmist	33
Capital	49_53_38F1	Putnam Pike	211
Capital	49_53_26W5	Woonsocket	9
Capital	49_53_26W3	Woonsocket	34
<b>Totals</b>			<b>685</b>

FY 2021 Gypsy Moth Update	
FY 2021 Total Gypsy Moth Spend	\$922,820
Gypsy Moth Removals	685
Cost/Tree	\$1,347

**Attachment D**

**US Electricity Distribution - Rhode Island  
Inspection and Maintenance Program and Other O&M Spending  
For the Twelve months Ending March 31, 2021  
(\$000)**

	<b>Budget</b>	<b>Actual</b>	<b>% Spend</b>
Opex Related to Capex	\$435	\$243	56%
Inspections & Repair Related Costs	\$600	\$465	78%
System Planning & Protection Coordination Study	\$25	\$0	0%
VVO/CRV Program	\$432	\$138	32%
<b>Total I&amp;M Program and Other O&amp;M Spending</b>	<b>\$1,492</b>	<b>\$846</b>	

## Attachment E

### US Electricity Distribution - Rhode Island Project Variance Report For the Twelve months Ending March 31, 2021 (\$000)

Project Description	FY 2021 Budget	FY 2021 Actual	Over / (Under)	Variance Cause
Aquidneck Island Projects	\$13,485	\$9,215	(\$4,270)	Work shifting to FY 2022 and expecting lower project costs.
East Providence Substation	\$1,550	\$240	(\$1,310)	Project delays.
New Lafayette Substation	\$390	\$933	\$543	Advancing civil work to enable efficiencies by coordinating with a DG project taking place on the same site.
Dyer Street Indoor Sub	\$7,160	\$3,239	(\$3,921)	Project paused as options were assessed. Rescoped project at reduced total costs and restarted in late FY21 shifting costs into FY22.
Providence Study	\$4,240	\$2,650	(\$1,590)	Project delays.
Franklin Sq Breaker Replacement	\$1,135	\$605	(\$530)	Due to COVID related issues, 4 breakers were delivered during FY 2021, but will be installed during FY 2022.
SouthEast Substation (D-Line and D-Sub)	\$10,080	\$12,951	\$2,871	FY 2021 overspending is consistent with the underspending in FY 2020 due to project delays. Additional costs associated with soil management (environmental) and equipment rentals (construction site congestion) exceeded the amount budgeted for the year.
	<b>\$38,040</b>	<b>\$29,833</b>	<b>(\$8,207)</b>	

## Attachment F

### US Electricity Distribution - Rhode Island Damage/Failure Detail by Work Type For the Twelve months Ending March 31, 2021 (\$000)

	Project Type					Grand Total
	D-Line Blanket	D-Line Property Damage	D-Line Storm	D-Sub Blanket	D-Sub & D-Line Specific	
AFUDC	\$62	\$0	\$58	\$7	\$0	\$127
Default Accounting	\$1,740	\$403	\$296	(\$60)	(\$2)	\$2,377
Engineering/Design/Supervision	\$677	\$249	\$703	\$7	\$4	\$1,640
Outdoor Lighting - Cable/Wire	\$9	\$0	\$0	\$0	\$0	\$9
Outdoor Lighting - Framing	\$68	\$11	\$3	\$0	\$0	\$82
Outdoor Lighting - Poles/Foundation	\$9	\$2	\$0	\$0	\$0	\$11
Overhead Bonding/Grounding	\$20	\$3	\$2	\$0	\$0	\$25
Overhead Services	\$229	\$38	\$234	\$0	\$0	\$501
Overhead Switches/Reclosers/Fuses	\$673	\$235	\$167	\$0	\$0	\$1,076
OH Transformers/Capacitors/Regulators/Meters	\$455	\$171	\$282	\$0	\$0	\$908
Overhead Wire & Conductor	\$373	\$123	\$321	\$0	\$0	\$817
Pole Framing	\$199	\$105	\$168	\$0	(\$0)	\$473
Poles/Anchors/Guying	\$1,307	\$1,330	\$5,220	\$0	\$0	\$7,856
Substation Equipment Installations	\$0	\$0	\$0	\$298	\$465	\$762
Substations Civil/Structural	\$0	\$0	\$0	\$0	\$1	\$1
Switching and Restoration	(\$2)	\$18	\$45	\$1	\$0	\$61
Traffic Control	\$306	\$219	\$182	\$0	\$0	\$707
Underground Cable	\$965	\$282	\$16	\$0	\$0	\$1,263
Underground Cable Splicing	\$28	\$6	\$4	\$0	\$0	\$38
Underground Civil Infrastructure	\$226	\$240	\$29	\$0	\$0	\$496
Underground Direct-Buried Cable	\$708	\$71	\$35	\$0	\$0	\$815
Underground Services	\$32	\$1	\$8	\$0	\$0	\$42
Underground Switches/Reclosers/Fuses	\$85	\$6	\$11	\$0	\$0	\$102
UG Transformers/Capacitors/Regulators/Meters	\$209	\$20	\$42	\$0	\$0	\$272
<b>Total</b>	<b>\$8,380</b>	<b>\$3,534</b>	<b>\$7,827</b>	<b>\$252</b>	<b>\$467</b>	<b>\$20,461</b>
Reclassification adjustment between D/F and A/R	(\$970)	\$0	\$0	\$0	\$0	(\$970)
<b>Adjusted Total</b>	<b>\$7,410</b>	<b>\$3,534</b>	<b>\$7,827</b>	<b>\$252</b>	<b>\$467</b>	<b>\$19,491</b>

## Attachment G

### US Electricity Distribution - Rhode Island New Southeast Substation Budget and Project Management Report For the Twelve months Ending March 31, 2021

**New Southeast Substation**  
Date: April 30, 2021

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## New Southeast Substation Project Agenda

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- Background & Drivers
- Scope
- Cost & Major Milestones
- Support Documentation
- Other



## New Southeast Substation Project Background & Drivers



- Pawtucket No. 1 substation supplies load in the City of Pawtucket, Rhode Island. It consists of an indoor substation located in a four story brick building constructed in 1907 and an outdoor substation on the yard. It supplies approximately 36,000 customers with a peak electrical demand of 114MW. There are a number of concerns in this area:
  - The equipment in the indoor substation is 40 to 94 years old, obsolete, and no longer supported by any vendor. Parts have to be custom made or salvaged from facilities removed from service.
  - The building has structural issues that cause concern for the continued safe and reliable operation of the substation.
  - There is un-served load for loss of either the 73 transformer or the 74 transformer that exceeds the distribution planning criteria.
  - The loading on a number of feeders is projected to exceed summer normal ratings along with the loading on bus section 73

## New Southeast Substation Project Scope



- Construct a new eight feeder 115/13.8kV metal clad station (Dunnell Park #1201) with two transformers and breaker and a half design on a site adjacent to the transmission line right of way on York Avenue in the City of Pawtucket.
- Supply the new station from the existing 115kV lines crossing the site, X-3 and T-7.
- Rearrange the 13.8kV distribution system so that the new station supplies most of the load east of the Seekonk River.
- Install a new control house at the Pawtucket No 1 station site to house the control equipment for the 115 kV station presently located in the four story brick building and upgrade the 115kV Line Protections (P-11,X-3,T-7).
- Upgrade in Valley station the 115kV Line Protections for P-11.
- Remove the indoor substation and all electrical equipment from the four story brick building and demolish the building.

## New Southeast Substation Project Cost & Major Milestones

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### Project Cost

- Total Project Cost of \$38.182M (+/- 10%) DOA: \$38.182M
- Transmission Project Cost of \$12.742M (+/-10%)
- Distribution Project Cost of \$25.440M (+/-10%)

## New Southeast Substation Project Cost & Major Milestones

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- The variance between the initial potential project investment of \$23.000M and this sanction of \$38.182M was caused by:
  - Addition of new 115kV equipment on Pawtucket No. 1 and on the new substation (Dunnell Park #1201) as result of the review of protection requirements for the project. The updated scope includes the installation of 115kV CCVT's, Line Traps, Line Tuners and related relaying and civil & structural work on X-3 and T-7 transmission line terminals on both substations (\$4.485M).
  - Additional civil and environmental scope of work on Pawtucket No. 1 based on the final location of the new control house inside the 100 year floodplain and the alignment with Tidewater Environmental Project requirements (\$4.865M).
  - Underestimation on the scope and level of effort on the distribution line work for the new feeders and distribution circuits rearrangement on the City of Pawtucket (\$4.517M).
  - Increase on equipment market value and other miscellaneous additional costs (\$1.315M).

## New Southeast Substation Project Major Milestones

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### Project Major Milestones

Project Sanction	July 2019
Engineering Design Complete (EDC)	December 2019
Construction Start	January 2020
Dunnell Park Sub Ready for Load (RFL)	March 2021
Valley Sub Ready for Load (RLF)	June 2021
Pawtucket 1 Ready for Load (RFL)	June 2022
Construction Complete (CC)	August 2022
Demolish Pawtucket 1 Station Building	October 2022
Project Closeout	July 2023

PAWTUCKET NO. 1 STATION

## New Southeast Substation Project Support Documentation

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New Southeast Station (Dunnell Park) – Location



## Attachment H

### US Electricity Distribution - Rhode Island Meter Purchases For the Twelve months Ending March 31, 2021

Quantity of Meters Purchased		
Type	Description	Quantity
METER	CENTRON - 2S ERT CL200	4,800
METER	CENTRON - 12S ERT CL200	960
METER	FOCUS - 2S 240VCL200	2,670
METER	FOCUS - 12S 120V CL200	45
METER	2S AMR 240V CL200	1,200
INSTRUMENT TRANSFORMER	CUR OUTDOOR 50/5 15KV	12
INSTRUMENT TRANSFORMER	CUR OUTDOOR 15/5 15KV	24
INSTRUMENT TRANSFORMER	CUR OUTDOOR 20/1 5KV	15
INSTRUMENT TRANSFORMER	CUR OUTDOOR 100/5 15KV	54
INSTRUMENT TRANSFORMER	CUR OUTDOOR 200/5 15KV	9
INSTRUMENT TRANSFORMER	CUR OUTDOOR 60/1 7.2KV	4
INSTRUMENT TRANSFORMER	CUR INDOOR 100/5 600V	120
INSTRUMENT TRANSFORMER	CT 100:5	60
INSTRUMENT TRANSFORMER	JVW5 NEES PT	8
INSTRUMENT TRANSFORMER	600:5 BASE BUSHINGS	30
INSTRUMENT TRANSFORMER	800:5 BASE BUSHINGS	60
INSTRUMENT TRANSFORMER	1500:5 CAP	24
INSTRUMENT TRANSFORMER	ASTRA DB 2.5 300:120	120
	<b>TOTAL</b>	<b>10,215</b>